# (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

### (19) World Intellectual Property Organization International Bureau



## 

(43) International Publication Date 15 January 2004 (15.01.2004)

**PCT** 

(10) International Publication Number WO 2004/005408 A1

(51) International Patent Classification7:

C09C 1/36,

C01G 23/047, 9/02, 49/02, 1/02

(21) International Application Number:

PCT/EP2003/005774

(22) International Filing Date:

3 June 2003 (03.06.2003)

(25) Filing Language:

**English** 

(26) Publication Language:

English

(30) Priority Data: 102 29 761.4

3 July 2002 (03.07.2002) DE

(71) Applicant (for all designated States except US): DE-GUSSA AG [DE/DE]; Bennigsenplatz 1, 40474 Düsseldorf (DE).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): LORTZ, Wolfgang [DE/DE]; Feldstrasse 9, 63607 Wächtersbach (DE). BATZ-SOHN, Christoph [DE/DE]; Riedstrasse 10a, 63454 Hanau (DE). HASENZAHL, Steffen [DE/DE]; Hochstädter Landstrasse 113, 63454 Hanau (DE). PER-LET, Gabriele [DE/DE]; Oberhaagstrasse 7a, 63538 Grosskrotzenburg (DE). WILL, Werner [DE/DE]; Schulstrasse 46, 63571 Gelnhausen (DE).
- (74) Common Representative: DEGUSSA AG; Intellectual Property Management, Patente und Marken, Standort Hanau, Postfach 13 45, 63403 Hanau (DE).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, IP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

### Declarations under Rule 4.17:

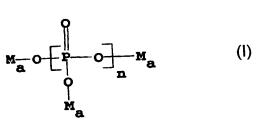
as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR) of inventorship (Rule 4.17(iv)) for US only

#### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AQUEOUS DISPERSION CONTAINING PYROGENICALLY PRODUCED METAL OXIDE PARTICLES AND PHOSPHATES



(57) Abstract: Aqueous dispersion containing pyrogenically produced oxide particles of titanium, zinc, iron or cerium having an average particle size, expressed as a median value, in the dispersion of less than 200 nm, the particle sizes of the oxide particles are not distributed symmetrically in the dispersion, the dispersion contains as dispersing agent at least one (poly)phosphate corresponding to the general formula I and has a pH of 4.5 to 7.5. It is prepared

by dispersing a stream of a preliminary dispersion by means of a high-energy mill. It can be used in sunscreen formulations.